PROPERTIES OF HYBRID BOARD FROM RICE HUSK AND RUBBERWOOD FIBER

By

MOHD HAZIQ ZULFADHLI BIN ZAHARI

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CANDIDATE'S DECLARATION

I declare that the work in this thesis was carried out in accordance with the regulations of Universiti Teknologi MARA. It is original and is the result of my own work, unless otherwise indicated or acknowledged as reference work. This thesis has not been submitted to any other academic institution or non-academic institution for any other degree or qualification.

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Name of Candidates	:	Mohd Haziq Zulfadhli Bin Zahari
Candidate's id No	:	2012614928
Programme	:	Bachelor of Science (Hons) in Furniture Technology
Faculty	:	Applied Sciences
Thesis Title	:	**Properties of Hybrid Board from Rice Husk and Rubberwood Fiber**
Signature of Candidate	:	.....
Date	:	12/7/2015

ABSTRACT

PROPERTIES OF HYBRID BOARD FROM RICE HUSK AND RUBBERWOOD FIBER

This study evaluated the physical and mechanical properties of a hybrid board consisting of rice husk and rubberwood fiber by varying the ratios of rice husk and rubberwood fiber. Currently rubberwood supply is decreasing and limited in resources thus another agriculture waste species were promoted as very promising raw material for wood composite product. The objective of this study are to determine the physical and mechanical properties and evaluate the suitable ratios for hybrid board. The hybrid boards were manufactured from three different percentage of ratios of rice husk and rubberwood fiber (50:50, 25:75 and 75:25) and the target board density was 650 kg/m^3 with applied 12% of Phenol Formaldehyde (PF) as a binder. The hybrid board quality were evaluated by determine of bending properties including modulus of rupture (MOR), modulus of elasticity (MOE), internal bonding (IB) strength. Thickness swelling (TS) and water absorption (WA) based on JIS A5905:2003. The results show that the bending strength and internal bonding were decreasing with the increasing of percent of rice husk in the board. The result for thickness swelling also show the same result. But the water absorption was increasing with the increasing of percent of rice husk in the board.

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